

## REMARKS

Applicants have amended the specification, claims 3, 11, 14 and 17 and have added new claims 35-51. The Examiner's comments and rejections are addressed below.

### Specification

The Examiner objected to the wording used in page 1, line 7, stating "[f]or the purposes of this patent...." Applicants have followed the Examiner's suggestion to replace the word "patent" with "disclosure." Therefore, Applicants respectfully request the withdrawal of this objection.

### Claim Objections

The Examiner objected to claims 3, 11 and 14 because the phrase "to process said voltage data" was repeated. Accordingly, Applicants have deleted the repeated phrase in these claims. In light of these amendments, Applicants respectfully request withdrawal of these objections.

### The 35 U.S.C. § 112 Rejections

The Examiner has rejected claims 17-32 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, in which claims 18-32 depend upon claim 17. Specifically, the Examiner asserted that claim 17 was "unclear how the memory can calculate a current flow." Applicants have amended claim 17 to recite that the data processing unit comprises an executable program to calculate a current flow. Support for this can be found on page 3, lines 22-26 of the specification, which describes the memory storing a set of executable programs and data. Therefore, independent claim 17 is believed to be in condition for allowance, particularly in light of the Examiner's remarks that claims 17-32 would be allowable if rewritten to overcome this rejection. Applicants respectfully request withdrawal of this rejection and allowance of claims 17-32.

### The 35 U.S.C. § 102(b) Rejections

The Examiner has rejected claims 3-8, 11-14, 16 and 34 as being anticipated by U.S. Patent No. 5,897,505 ("Feinberg"). Applicants respectfully traverse this rejection in light of

the amendments to independent claims 3, 11 and 14, from which the remaining claims depend.

The apparatus in Feinberg is a body impedance meter, not an apparatus for measuring voltage between two contacts placed on a living body and *calculating* a current flow based upon that measured voltage and body impedance data. The device taught by Feinberg determines body impedance from a fixed voltage source and produces conductance values for the subject of interest. This device does not calculate a current flow associated with the measured voltage.

More specifically, the device taught by Feinberg generates a steady 1.41 volts that is applied to probes on the skin (col.3, lines 50-52), thereby creating a current that passes through the circuit, including the skin and a known resistor (Fig. 1, 2, 3A, and 3B). The device measures the voltage drop across this known resistor (col. 3, line 50-col. 4, line 2 and Fig. 3A). This voltage drop is then converted into a binary address that is used to fetch a given tissue conductance value that is displayed (col. 4, lines 4-10). In other words, Feinberg's apparatus determines body conductance by locating a body conductance value from a look-up table within the micro-controller's memory that has been pre-programmed.

Claims 3, 11 and 14 of the present application recite that the first and second contacts measure a voltage, thereby producing voltage data, and that this voltage data is used with body impedance data to produce current flow data. As stated above, Feinberg applies a fixed voltage and measured the voltage drop associate with a known resistor to then select a conductance value. Feinberg's device simply does not measure a voltage drop across the contacts on the body, nor does it calculate an associate current flow through the body. Again, Feinberg is actively applying a voltage to the body and measuring the voltage drop across a known resistor within the device to obtain a conductance value for the skin. Therefore, none of these independent claims are anticipated by Feinberg, and withdrawal of this rejection is respectfully requested.

Moreover, Feinberg does not teach or suggest the limitations of new independent claims 36 and 40, which each recite an apparatus for measuring voltage in a living body associated with the living body's environment without applying a current to the living body. These claims are directed to an embodiment of the present invention in which the current flowing through the body is based upon the body's environment or surroundings and is not based upon an artificially applied current, which is what most prior art meters use. The current flow in the body associated with the body's environment is determined by measuring the voltage between the two contacts with the data acquisition circuitry. This voltage data

may then be used with body impedance data, which may be, for example, generic impedance data or separately measured impedance data, to calculate the current flow through the body.

As stated in the specification, the invention, in at least one embodiment, is a contact meter analysis device (page 1, lines 3-4), wherein contact current is the current that flows in a body when the body touches two different electrically conductive point in its environment (page 1, lines 7-9). Such contact currents are typically small and need a sensitive device to measure them (page 2, lines 5-6). The invention is directed to such a device that non-invasively determines the magnitude of the current flowing through the body (page 2, lines 20-21), where one of skill in the art would appreciate that non-invasively would exclude devices that actually apply a current to the body.

To measure such contact current, the invention, as claimed in independent claims 36 and 40, comprises data acquisition circuitry configured to measure the voltage between two contacts placed on a body without applying a current to the body. This provides the voltage data that can then be used in conjunction with impedance data to calculate the current flow in the body associated with the body's environment. The specification states that Ohm's law can be used to take the voltage data and generic body impedance data to calculate the current flow through the body (page 5, lines 25-27). It would be redundant to calculate the current flow if a known current were already being applied to the body. In other words, measuring the voltage between two contacts on the body, wherein an artificially applied current is present, would simply result in measurement of the voltage associated with that artificially applied current and not the current associated with the body's environment. Moreover, there would be no need to calculate current flow or to use a central processing unit to calculate current flow from the measured voltage data and known body impedance data, as recited in claim 40. (It should be appreciated that the specification does teach an embodiment of the invention where an applied current may be used to generate such body impedance data (page 5, line 32 - page 6 line 6). However, even in this case, the specification still states that the current is *calculated* based upon the voltage data and the impedance data determined in this manner (page 6, lines 7-9).) Therefore, the specification clearly provides written description for the apparatus recited in claims 36 and 40 wherein a current is not applied in connection with the measurement of the voltage between the contacts on the body. Therefore, Applicants believe that new claims 36 and 40 are in allowance, as well as their dependent claims, claims 37-39 and 41-51.

### **The 35 U.S.C. § 103 Rejections**

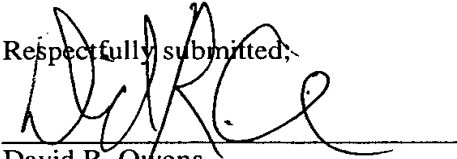
The Examiner has rejected claims 9, 15 and 33 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,897,505 ("Feinberg") further in view of U.S. Patent No. 6,393,317 ("Fukuda"). Applicants respectfully traverse these rejections in light of the failings of Feinberg to teach or suggest the limitations of independent claims 3, 11 and 14, from which 9, 15 and 33 depend. Furthermore, Fukuda does not teach or suggest the production of current flow data from measured voltage data using data acquisition circuitry consisting essentially of a first contact and a second contact and body impedance data as recited in independent claim 3, 11 and 14. Therefore, Applicants respectfully request the withdrawal of these rejections. Moreover, with respect to new independent claims 36 and 40, neither Feinberg nor Fukuda teach or suggest a device configured to measure voltage in a living body associated with the living body's environment without applying a current to the living body.

### **Conclusion**

In light of the above amendments and remarks, Applicants believe that all of the currently pending claims are in conditions for allowance, and a Notice of Allowance is respectfully requested. The Examiner is invited to call the undersigned attorney if a telephone call could help resolve any remaining items.

Date: April 6, 2004

Respectfully submitted,



David R. Owens

**Morgan, Lewis & Bockius LLP**  
3300 Hillview Avenue  
Palo Alto, California 94304  
(650) 493-4935

40,756  
(Reg. No.)